THE MAGAZINE FOR GROWING COMPANIES

MAY 1989
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Inc.

THE INC. 100
AMERICA'S FASTEST-GROWING SMALL PUBLIC COMPANIES

BLOW UP

The Anatomy of a Partnership Gone Bad

It was a Monday morning Jim Eme will never forget. Over the weekend, six of his eight salesmen had stolen into the company and cleaned out their desks. Gone, Eme says, were customer lists, price lists, and parts diagrams, even staplers. The place was barren—as empty as the feeling in Eme's gut. The company he had foun[illegible]d.

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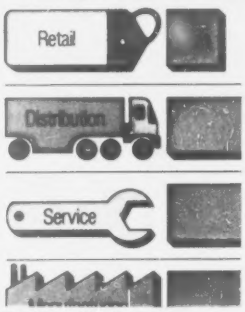

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by
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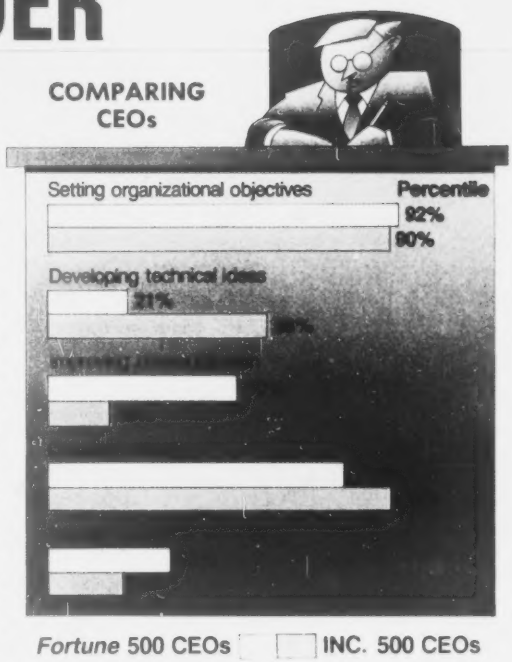
INSIDER

BIG VS. SMALL

How do the CEOs of INC. 500 companies stack up against their big-company counterparts? That seems a timely question, given the debate raging over the relative strengths of large and small companies. Hoping to answer it, we had Park Ridge, Ill.-based London House Inc. administer aptitude and job-skills tests to 70 top executives, half from *Fortune*'s Industrial and Service 500s and half from INC.'s list of the 500 fastest-growing privately held companies. The results are intriguing.

Many of the tests measured management skills. Not surprisingly, the older, more experienced *Fortune* 500 executives came out ahead in all but 5 of the 16 areas tested. But in one skill crucial to growing companies—the ability to promote the company to the outside world—the INC. 500 CEOs easily surpassed both executive norms and their *Fortune* 500 counterparts. INC. 500 executives also came out far ahead of the *Fortune* group in their ability to develop technical ideas, an area in which the large-corporation executives performed poorly. On the other hand, the INC. 500 CEOs were weaker in people skills such as improving channels of communication, supervising employees, and encouraging teamwork. Both groups' strongest job skill was long-range organizational planning.

In tests of mental aptitudes and abilities, both samples scored high but showed different intellectual fortes. *Fortune* 500 executives did exceptionally well in the area of vocabulary (better than 92% of the cases in the norm base), while INC. 500 CEOs were strongest in creativity (better than 90% of the executive population). Both groups were also well above average in drive, financial responsibility, and family-oriented lifestyle. But the tests revealed that both samples are exposed to above-average stress and anxiety, with the INC. 500 group showing the more extreme results. Fortunately, the INC. 500 CEOs also proved much better at working under pressure than both *Fortune* CEOs and the management population at large. Of course, that's probably a requirement of the job. —*Martha E. Mangelsdorf*



How INC. and Fortune *500 chief executive officers scored in comparison with a database of more than 10,000 managers*

NEW BUSINESSES

By Leslie Brokaw

Baby Bloomers National competition may soon hit another mom-and-pop industry: flower shops. With more than $5 million from such investors as Federal Express, Dallas-based Flower Country USA plans to open retail stores with centralized delivery and operations, allowing shops to concentrate more on service and rack up higher profits. The first group of stores and central hub opened last November in Dallas.

Big Notes For 15 years, Richard Friedmar transcribed sheet music into enlarged notation for visually impaired piano students. Then he came up with a better solution: a kind of magnified slide viewer that projects music measure by measure. Friedmar Music Magni-Viewer, in Toledo, is targeting the machine and accompanying carousels of music to such institutions as nursing homes.

Spud Saver When the FDA banned sulfites on raw produce in 1986, researchers at Purdue University were already working on a nonsulfite option. Now, the FDA plans to ban sulfites in processed potatoes, too, and Extended Product Life Inc., in Bala Cynwyd, Pa., is marketing the Purdue-developed preservation technique, currently being tested by Ore-Ida Foods and General Foods. Estimated market: $300 million.

Flash Cards Prepaid Card Services Inc., in Pearl River, N.Y., is bringing electronic payment to school cafeterias. Its system allows children to pay with optically read cards. NCR Corp. provides the computers and marketing. The pitch? Faster lines, increased cafeteria usage, and better documentation of the number of students getting subsidized meals.

Radio Days Eight million people listen to radio in Los Angeles, and Phil Marino and Tommi Lewis hope at least 10,000 of them will buy their 95¢ biweekly listing of programs. *Radio Guide Magazine* hit L.A. newsstands in March after a three-month test. Radio Waves Inc. is betting that listeners who now use the radio randomly really want to know what's on, and when.

THE NEXT PRIORITY

Why it's not enough to create jobs

BY JOHN CASE

The New Economy that's been emerging over the past 15 years—an economy in which growing companies play an ever-greater role—deserves two healthy cheers. Since 1974 it has provided us with a whopping 29 million new jobs, thereby absorbing the huge baby-boom generation into the labor force. For the past decade or so, it has stimulated massive industrial restructuring, thereby enabling U.S. companies to compete on a global scale once more.

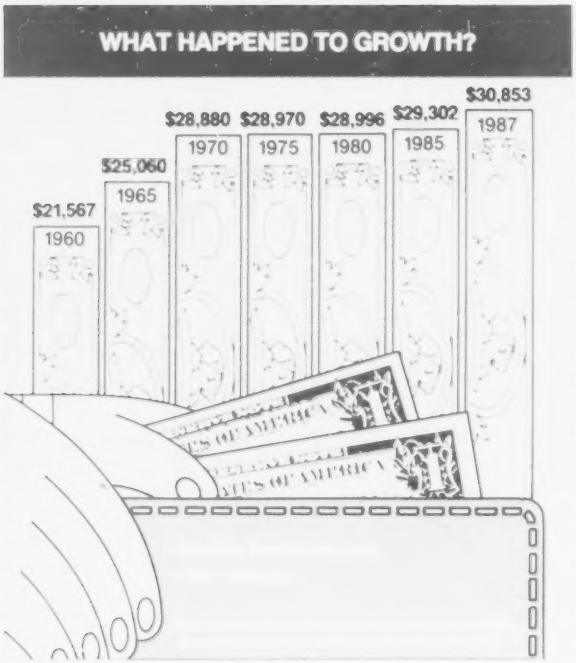
What this economy hasn't done, so far, is improve our standard of living.

Harsh words? Nope. Despite the efforts of *Fortune* magazine and others to put a rosy glow on the situation (see box, "Lies, Damn Lies, and Statistics," page 30), the facts are hard to dispute. All you have to do is browse through the latest *Economic Report of the President* and compare some fundamental figures for recent years with those for the early 1970s.

It's an eye-opening exercise. Median family income in 1987: $30,853. Median family income in 1973 (expressed in 1987 dollars): $30,820. Average hourly wages in 1987: $8.98. Average hourly wages in 1973: $9.66. We have been going nowhere fast for a decade and a half.

The news isn't totally bleak. A bigger fraction of the population works outside the home now, and nonwage income such as Social Security is up. That's why family income has stayed level while wages have declined. Income per person—as opposed to per family—is up too, partly because average family size is shrinking. Still, nobody doubts the underlying trend. "Family income grew very fast from the end of the Second World War to the first oil price shock, in 1973," says the University of Maryland's Frank Levy, a specialist in the subject. "It hasn't really grown since then. And wages, on average, have been stagnant."

Levy, whose book *Dollars and Dreams* has just been issued in paperback, argues that the stagnation in income levels has grim social consequences. In the 1950s and 1960s, as now, some groups in the population were always doing better than others; relative gains and losses are a part of any free-enterprise economy. But back then, the pie as a whole was expanding every year. So nearly everyone could count on an eventual improvement in their lot.



Much has improved over the past 15 years, but not our standard of living.

Today a bigger piece for one group over time means a smaller piece for someone else. Since 1973, for example, women's overall earnings have grown, and the earnings of college-educated women over 35 have grown the most. But young, male workers with no college have seen corresponding losses. "Back in the early 1970s the average 30-year-old guy with a high-school diploma was making $24,000 in today's dollars," Levy explains. "Today a similar guy is making about $18,000."

Nor can people necessarily count on a brighter future for their children. In 1969 the typical blue-collar worker was making more, in real terms, than an executive made 20 years earlier. So working-class parents could feel reasonably good about the prospects of sons and daughters who chose to pursue blue-collar careers. Today no one—not even economists such as Levy—can count on better times for his or her offspring. "I really don't know if my son will outearn me," he says.

Underlying the stagnant income figures is another, more puzzling number. Changes in productivity, or output per worker, show how we as a nation are doing, relative both to our own past and to other countries, in the long run. Rising productivity is the only ticket to a rising standard of living for all. During the fat years—the 1950s and 1960s—productivity rose at better than a 3% annual clip, or 70% over the course of two decades. Since the early 1970s productivity growth has been sporadic, averaging 1% or so a year.

Economists can't yet offer us a comprehensive explanation of the productivity slowdown; what they can do is point to factors that undoubtedly contributed to it, such as the dramatic hike in oil prices during the 1970s and the sharp recession of 1981–82. One significant factor was simply the huge influx of new workers into the labor force. The baby boom alone would have flooded the economy with millions of new job seekers; the rising proportion of women working outside the home added to the number. As most business owners can testify, this influx of young and inexperienced workers lowered the average skill level of the labor force; it also tended to decrease the amount of capital equipment at each employee's disposal. Overall output, of course, rose. But output per employee grew much more slowly than it had in the past.

You can look back on the economy of the past 15 years and argue that its major task, so to speak, was to provide jobs for

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Is your company a global competitor?

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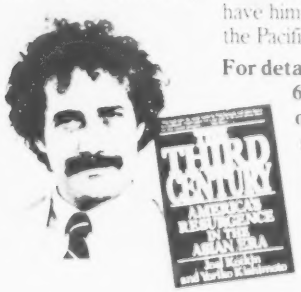
Critics warn that American business is facing decline, but Joel Kotkin, co-author of *The Third Century: America's Resurgence in the Asian Era*, insists that our unique assets can help shape an industrial renaissance.

Kotkin, Inc.'s West Coast editor, offers a provocative rebuttal to predictions of economic doom. "Our wealth of resources, entrepreneurial drive and multiethnic labor force form the basis for a new American ascendency," says Kotkin.

Kotkin urges audiences to capitalize on these inherent strengths as America enters its "third century" of independence. You'll want to hear his views and have him answer your questions about meeting the Pacific Rim challenge.



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LIES, DAMN LIES, AND STATISTICS

Fortune's rose-colored glasses

For reasons best known to its editorial board, *Fortune* seems to want to persuade us that things have never been better. "Do We Live as Well as We Used To?" asked a cover story in late 1987 (answer: "vastly better"). "Are You Better Off Than in 1980?" wondered an article published a year later (answer: almost certainly).

It's reminiscent of the dictum, variously attributed to Mark Twain and Benjamin Disraeli, "There are three kinds of lies: lies, damn lies, and statistics." The problem isn't that the numbers aren't true; it's that you can make them say whatever you want to.

Sylvia Nasar's 1987 article, for example, compared family income levels in 1986 with what they were in 1969. Surprise! They're "that again as high." What the author doesn't mention is that *all* that growth took place between 1969 and 1973. Since 1973, median income has dropped, risen, dropped again, and risen again, leaving it right back where it began. Those fluctuations, in turn, made Louis S. Richman's job in the 1988 article easier. "Median family income . . . is well above its 1981 level," he wrote. True: it went up 10% from 1981 to 1987. But in 1981 it was slightly below the level of *1968*.

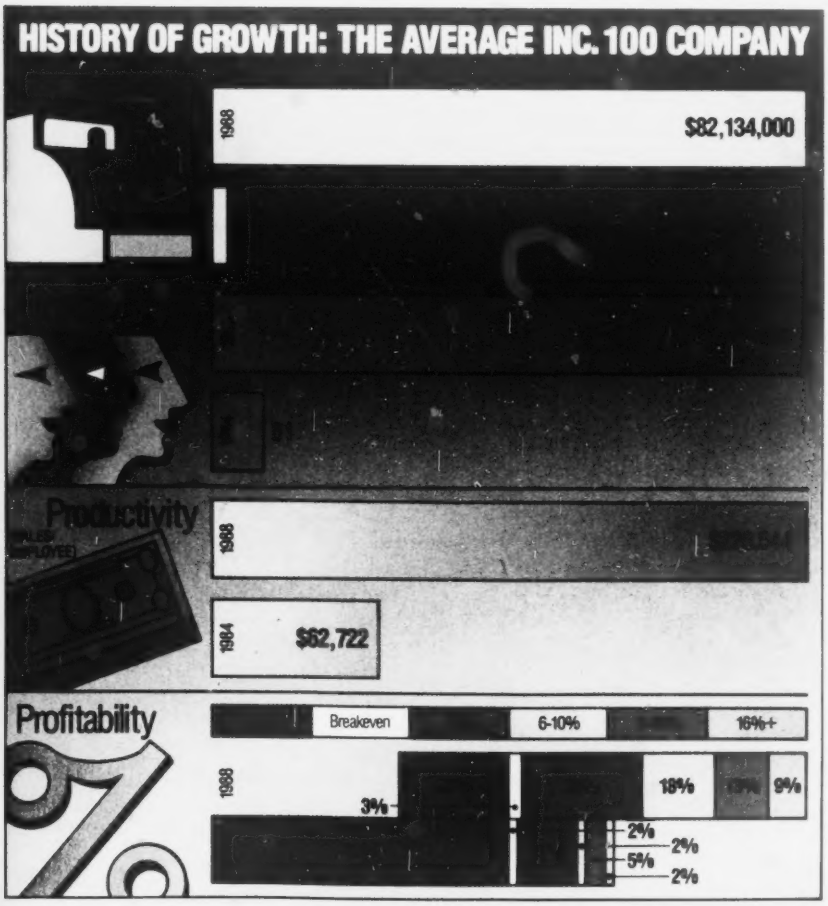
In a fast-changing economy like ours, there will always be winners and losers, and the two groups will have dramatically different perspectives on how well "everyone" is faring. But the bottom line for an economic system is its participants' average standard of living. By that measure, our fortune hasn't been so good.

all those new workers. Our system accomplished the task well, even though the nation's largest manufacturers were cutting back their employment. We would have had an economic disaster in the 1980s but for the enormous number of jobs generated by growing companies.

That achievement, however, shouldn't blind us to the stagnation in living standards during this period. Should the slowdown continue, we'll lose ground relative to nations (such as Japan) that are experiencing regular productivity gains. And voters on the losing side of the averages will rightly begin to wonder about an economy that provides a lot of jobs—but not much hope.

THE INC. 100

The 11th annual ranking of America's fastest-growing small public companies



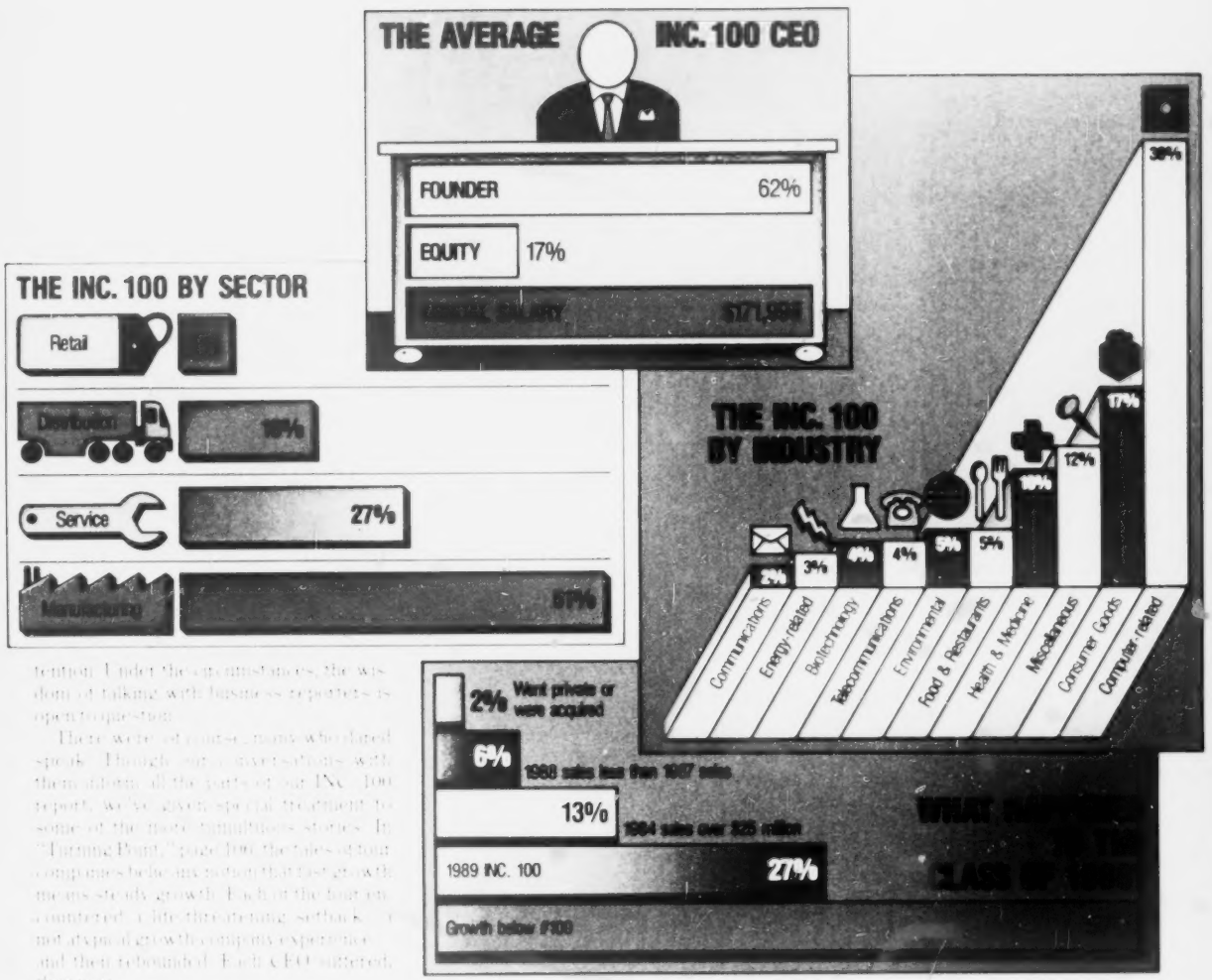
Work the INC. 100 beat long enough, and you can begin recycling the headlines.

Again, on this year's list, the average five-year growth rate of 3,731% approaches the incomprehensible—high enough to astonish us (and to stagger the companies that experience it). Again, it was harder to make the list than ever before; Intelligent Electronics Inc., #100, would have placed 93d last year and 54th as recently as five years ago. And again, just as it got tougher to appear on the list, it got tougher to make money on the way. Twenty-seven of this year's 100 are in the red, compared with 23 a year ago and 19 five years back.

But if the numerical trends in the 1989 ranking aren't new, there's something about working with the INC. 100 companies that is. Call it the Public-Company Publicity Paradox.

More so than in previous years, our routine phone calls to companies on the list unearthed some disquieting CEO nervousness. Several chief executives wouldn't talk to us at all; many others were unusually skittish about answering our questions. Why? Takeover fears, we were told. If these 100 businesses are representative, then small public companies are feeling more threatened than ever by unsolicited buyers.

Therefore, the paradox: while your average growth-company CEO needs to promote his historically undervalued company in order to pump its stock price, he now also fears publicity lest he attract takeover at-



tention. Under the circumstances, the wisdom of talking with business reporters is open to question.

There were of course many who dared speak. Through out-of-court chats with them about all the parts of our INC. 100 report, we've given special treatment to some of the more unsung stories. In "Turning Point," page 100, the tales of four companies help us to see that fast growth means steady growth. Each of the four encountered a life-threatening setback — not atypical growth-company experience — and then rebounded. Each CEO suffered, then won.

We also spoke with this year's #1 company, Teradata Corp., and its CEO, Kenneth W. Simonds.

The Los Angeles high-tech manufacturer booked approximately $90 million in revenues last year by selling what it calls a database computer — an add-on that hooks up to a host computer to hold and process huge databases, like those of banks, airlines, and telephone companies. The company has exploited a prototypical information-age problem: databases that have become so big that keeping them on the mainframe itself would use an enormous portion of the machine's computing and storage capacity — its horsepower — and slow everything down. Teradata's competition? IBM.

The company's road to the top has been paved with venture capital gold. Between its 1979 founding and 1987, when it went public, Teradata raised a whopping $67 million in VC money through six rounds of financing. But even with all that money, things were not always easy for Teradata. "At the very beginning, there was a long and difficult period," says Simonds. "The company ranks among the top in the 1980s in terms of the amount of venture money received. And we were about six years getting the company to its first profitable quarter.

"We need not knowing whether we'd be able to meet payroll two or three pay periods downstream, knowing that we had to complete one sale and get the money in, in order to keep things afloat," Simonds continues. "Even though we were continuing to work the next round of financing, it was never a *fait accompli* that we were going to get it."

Initial customer acceptance, Simonds says, was difficult to gain because of Teradata's tiny size. "I think potential customers knew that they had a problem we could help with. But they had to be confident that we had the staying power to bring the solutions that they were looking for.

"They were excited about the technology, but information is a major corporate asset. And they were hesitant to put that asset in the hands of a company that had never been profitable — and back then Teradata was doing $3 million or $4 million in revenues. Early on they would give us test applications to evaluate the technology — but also, I think, to evaluate us as a corporation."

Teradata, up to this point, has passed that external test.

Asked what questions preoccupy him today, Simonds cited internal ones — how to manage Teradata's expansion, how to handle people. It is a common refrain. Few of this year's CEOs seem concerned about the marketplace. They spoke instead, though not for Wall Street's ears, of fear and uneasiness with raging growth itself.

— The Editors

1989 RANK	COMPANY	1988 RANK	BUSINESS DESCRIPTION	SALES GROWTH: COMPOUND ANNUAL GROWTH	SALES GROWTH: DOUBLING TIME (WEEKS*)	REVENUES ($000): 1988	REVENUES ($000): 1984
1.	**TERADATA** (Los Angeles, CA)		Mfrs. high-performance database mgmt. systs.	479%	15	$61,478	$796
2.	**OCTEL COMMUNICATIONS** (Milpitas, CA)		Mfrs. & mkts. voice-processing systs.	297	26	48,308	193
3.	**METAL BANC** (Miami, FL)		Manufactures computer racks	276	27	28,332	467
4.	**CENTEX TELEMANAGEMENT** (San Francisco, CA)		Provides telecommunications mgmt. services	270	27	17,858	272
5.	**CONVEX COMPUTER** (Richardson, TX)		Mfrs. & mkts. supercomputers	262	27	52,470	711
6.	**SEQUENT COMPUTER SYSTEMS** (Beaverton, OR)		Mfrs. computer systems	257	28	71,399	439
7.	**INTERLEAF** (Cambridge, MA)		Develops & mkts. electronic publishing systs.	256	28	16,384	379
8.	**COMMODORE ENVIRON. SERVICES** (New York, NY)		Provides environmental services	255	28	79,220	494
9.	**NATIONWIDE CELLULAR SERVICES** (Palm Desert, CA)		Sells cellular telephone systems	252	28	41,400	268
10.	**PENTECH INTERNATIONAL** (Edison, NJ)		Designs & mkts. pens & pencils	248	28	7,136	58
11.	**HEALTHSOUTH REHABILITATION** (Birmingham, AL)		Operates & manages rehabilitation hospitals	246	29	61,442	411
12.	**EVEREX** (Fremont, CA)		Mfrs. & mkts. personal computers	245	29	99,776	844
13.	**ACTION AUTO RENTAL** (Chicago, IL)		Operates auto rental franchises	244	29	71,000	494
14.	**INTERNATIONAL BROADCASTING** (Washington, DC)		Produces & distributes programming	243	29	7,000	441
15.	**CMS ENHANCEMENTS** (Tustin, CA)		Provides data processing services	242	29	7,441	1,124
16.	**ONE PRICE CLOTHING STORES** (Seattle, WA)		Operates women's apparel stores	242	29	43,413	414
17.	**ALTERA** (Santa Clara, CA)		Develops & mkts. programmable logic devices	241	29	17,181	250
18.	**SAHLEN & ASSOCIATES** (Overland Park, KS)	7	Provides computer integration & systems services	240	30	14,449	460
19.	**EATERIES** (Redwood City, CA)		Operates & manages restaurants	240	30	10,178	329
20.	**ENTERTAINMENT MARKETING** (Houston, TX)	1	Mkts. consumer electronic products	240	30	56,419	1,819
21.	**DIAGNOSTEK** (Albuquerque, NM)		Develops & mkts. medical diagnostic systems	239	30	5,000	161
22.	**OSICOM TECHNOLOGIES** (Rockaway, NJ)	6	Develops & mkts. computer systems	238	30	21,648	704
23.	**FRANKLIN TELECOMMUN.** (McLean, VA)		Mfrs. & mkts. voice, data & satellite communications systs.	238	30	10,134	330
24.	**FIRST WORLD CHEESE** (South Orange, NJ)	40	Manufactures & sells specialty cheeses	238	30	8	264
25.	**ARIX** (San Jose, CA)		Mfrs. & mkts. computer systems for graphic arts	238	30	10,134	330
26.	**BEAUTY LABS** (Lake Success, NY)		Develops, mkts. & sells hair products	238	30	13,147	424
27.	**HARKEN OIL & GAS** (Richmond, TX)	11	Explores & drills for oil & gas reserves	237	34	50,307	10,299
28.	**CANTERBURY EDUC. SERVICES** (Walnut, CA)	51	Operates schools in Australia, Denmark, and the U.S.	236	34	1,004	102
29.	**HOME SHOPPING NETWORK** (St. Petersburg, FL)	2	Television specialty retailer	231	34	730,000	110,819
30.	**BRAUDAS** (Woodland Hills, CA)		Distributes computer hardware products	230	34	47,024	1,428
31.	**AUTODESK** (Sausalito, CA)		Develops & mkts. design & drafting software	230	34	71,257	2,164
32.	**PACE MEMBERSHIP WAREHOUSE** (Akron, OH)		Operates membership merchandise warehouses	230	35	464,261	14,100
33.	**CORPORATE SOFTWARE** (Westwood, MA)		Distributes software products	230	35	42,355	1,286
34.	**TELEMATICS** (Fort Lauderdale, FL)	21	Mfrs. computer-based telecommunications products	229	35	50,308	1,527
35.	**NELLCOR** (Hayward, CA)		Produces equipment for monitoring & measuring blood	227	35	41,508	2,071
36.	**AMERECO ENVIRON. SERVICES** (Kingsville, MD)		Provides toxic & hazardous waste services	226	35	8,664	189
37.	**CASH AMERICA INVESTMENTS** (Fort Worth, TX)		Owns & operates pawnshops	198	38	67,500	1,515
38.	**CYPRESS SEMICONDUCTOR** (San Jose, CA)		Designs & mfrs. digital integrated circuits	196	39	139,368	3,246
39.	**VESTRO FOODS** (Newport Beach, CA)		Manages food distribution operations	193	39	16,000	393
40.	**AMERICAN POWER CONVERSION** (Peace Dale, RI)		Designs & mfrs. power supply prods.	192	39	17,360	431
41.	**READICARE** (Newport Beach, CA)		Operates outpatient medical centers	191	39	19,296	486
42.	**PHOTON TECHNOLOGY INT'L** (Princeton, NJ)		Mfrs. proprietary electro-optical systs.	149	40	5,424	141
43.	**SILK GREENHOUSE** (Tampa, FL)		Operates artificial flower & plant stores	149	40	21,710	567
44.	**ADOBE SYSTEMS** (Mountain View, CA)		Designs, develops & mkts. graphic art software	148	40	83,483	2,209
45.	**AUTOMATED LANGUAGE PROC.** (Salt Lake City, UT)		Designs & mkts. software to translate languages	145	40	23,000	635
46.	**CLEOPATRA KOHLIQUE** (Freeport, NY)		Designs, formulates & distr. women's cosmetics	145	40	5,648	158
47.	**DISCUS** (Bloomington, MN)		Develops & operates Fuddruckers restaurants	139	42	15,361	473
48.	**CHRONAR** (Lawrenceville, NJ)		Develops & sells photovoltaic panels & equip.	138	42	30,000	928
49.	**SELECTRONICS** (Minneapolis, MN)		Develops & mkts. hand-held computerized prods.	138	42	10,009	310
50.	**MAGIC YRS. CHILD CARE & LEARN. CTRS.** (Plains, PA)		Operates child care & learning centers	138	42	6,300	197

c: company estimate; d: average time for revenues to double given sales growth from 1984-1988; i: INC. estimate; 9: nine-month figure; 87: 1987 salary; NA: not available

NET INCOME ($000) 1988	NET INCOME ($000) 1984	NO. EMPLOYEES 1988	NO. EMPLOYEES 1984	YEAR FOUNDED	NO. ACQUISITIONS	CEO	CEO SALARY	CEO FOUNDER	CEO EQUITY (%)
$12,510	$10,510	475	41	1975	1	Kenneth W. Schmidt	$331,000	N	10.4
6,910	3,400	240	5	1982	1	Robert Dill	200,250	Y	5.8
1,000	1	11	1	1981	1	Howard M. Lorber	125,000	Y	20.0
3,750	1,100	100	10	1981	1	Wm. C. Hooper	150,000	N	3.0
6,100	1,100	93	10	1981	1	Robert Hayes	150,000	Y	4.0
6,400	1,500	100	10	1981	1	Kal C. Shaw	150,000	N	3.8
5,465	1,400	104	8	1981	1	Lloyd Ruchter	150,000	Y	4.8
6,634	1,100	100	8	1981	1	Dave Wood	150,000	N	11.0
3,104	1,100	100	10	1981	1	Thomas Kay	125,000	Y	12.0
1,829	1,100	100	10	1981	1	Martin Mercer	125,000	Y	40.0
2,100	1,100	100	10	1981	1	Robert Hayes	150,000	Y	4.0
5,000	1,100	100	10	1981	1	Jack R. Hall	150,000	Y	4.0
5,000	1,100	100	10	1981	1	Jack R. Hall	150,000	Y	4.0
6,100

1989 RANK	COMPANY	1988 RANK	BUSINESS DESCRIPTION	SALES GROWTH: COMPOUND ANNUAL GROWTH	SALES GROWTH: DOUBLING TIME (WEEKS*)	REVENUES ($000): 1988	REVENUES ($000): 1984
51.	TEXCEL INTERNATIONAL						
52.	CALIFORNIA ENERGY						
53.	INTERSPEC	24					
54.	XYVISION						
55.	SILICONGRAPHICS						
56.	SIGMA DESIGNS	27					
57.	OXFORD ENERGY						
58.	LANDMARK GRAPHICS						
59.	NOVA PHARMACEUTICAL						
60.	NEECO	63					
61.	MEDIVIX						
62.	L.A. GEAR	90					
63.	MEASUREMENT SPECIALTIES						
64.	BABBAGES						
65.	NEOTERIK HEALTH TECH						
66.	DIAGONAL DATA	81					
67.	RAINBOW TECHNOLOGIES						
68.	TECH DATA	44					
69.	WHOLESALE CLUB						
70.	OLYMPIA BROADCASTING						
71.	MED CHEM PRODUCTS						
72.	ELEXIS						
73.	BALLARD MEDICAL PRODUCTS	18					
74.	ORACLE SYSTEMS	56					
75.	DOMAIN TECHNOLOGY	5					
76.	JACOR COMMUNICATIONS	68					
77.	CERNER	60					
78.	CALGENE	70					
79.	OCCUP URGENT CARE HEALTH						
80.	VIPONT PHARMACEUTICALS	10					
81.	AMERICAN MOBILE SYSTEMS						
82.	QUIPP						
83.	PHOENIX TECHNOLOGIES						
84.	INDEX TECHNOLOGY						
85.	MILLS JENNINGS						
86.	CLEAN HARBORS	69					
87.	SELVAC						
88.	IMMUCELL						
89.	PC QUOTE	98					
90.	CONFERTECH INTERNATIONAL						
91.	MAXTOR						
92.	NOVELL	41					
93.	EL POLLO ASADO						
94.	LIFECORE BIOMEDICAL						
95.	ENCORE COMPUTER	16					
96.	CATALINA LIGHTING		Imports & distr. lighting & ceiling fans	99	52	26,922	1,701
97.	SYSTEM SOFTWARE ASSOCIATES	23	Develops & mkts. business application software	98	53	61,525	3,972
98.	KIMMINS ENVIRONMENTAL SERVICE		Provides comprehensive environ. svcs.	97	53	78,000	5,144
99.	FLOWMOLE		Installs & replaces underground cables & pipes	97	53	25,669	1,697
100.	INTELLIGENT ELECTRONICS	48	Distr. microcomputers through franchises	97	53	128,994	8,563

NET INCOME ($000) 1988	NET INCOME ($000) 1984	NO. EMPLOYEES 1988	NO. EMPLOYEES 1984	YEAR FOUNDED	NO. ACQUISITION	CEO	CEO SALARY	CEO FOUNDER	CEO EQUITY (%)
			6	1978	2	Arun Govil	$155,000	N	40.0%
			30	1971	0	Charles T. Condy	240,000	Y	17.0
			60	1979	2	Edward Ray	241,420	Y	6.0
			40	1982	1	Laurence S. Liebson	141,269	Y	6.7
			170	1981	0	Edward R. McCracken	300,000	N	2.0
			19	1982	0	Thinh Q. Tran	77,000	Y	9.1
			5	1984	6	Robert D. Colman	178,000[87]	Y	8.0
			48	1982	1	C. Eugene Ennis	99,000	N	2.8
			45	1982	1	Hans Mueller	NA	N	1.0
			35	1982	1	Robert J. Crowell	118,000	Y	12.4
			7	1982	2	Rehavam Adiel	0	N	20.0
			24	1979	0	Robert Y. Greenberg	285,581	Y	29.9
			7	1981	0	Donald Weiss	82,741	Y	21.6
			120	1983	0	James McCurry	150,000	Y	9.0
			8	1981	0	Kenneth V. Vaughan	86,250	Y	15.0
			6	1981	3	Frank M. Foster	90,000	Y	39.9
			2	1982	0	Walter W. Straub	88,000	Y	15.1
			35	1974	0	Steven A. Raymund	450,000	N	24.0
			300	1982	0	John F. Geisse	152,504	Y	13.0
			70	1984	11	James Ireland	150,000	Y	18.1
			10	1970	1	David A. Swann	203,729	Y	10.5
			20	1980	1	Frank J. Bianco	70,000	Y	10.0
			47	1978	0	Dale H. Ballard	126,585	Y	21.4
			153	1977	1	Lawrence J. Ellison	1,362,500	Y	28.4
			124	1981	0	David Pearce	165,000	N	4.0
			170	1979	15	Terry S. Jacobs	325,000	Y	16.0
			57	1980	0	Neal Patterson	115,500	Y	14.0
			100	1980	4	Roger H. Salquist	125,865	N	4.0
			21	1982	1	James W. Cameron Jr.	122,100[2]	Y	26.0
			45	1968	0	Lawrence L. Frederick	121,600	N	3.4
			17	1982	4	William T. Young	150,000	Y	14.0
			20	1983	0	James Quakenbush	75,000	Y	11.0
			12	1979	3	Neil J. Colvin	287,397	Y	36.5
			48	1983	1	Richard A. Carpenter	214,184	Y	8.0
			5	1970	8	David J. Smith	160,000	N	12.4
			34	1980	3	Allan S. McKim	225,000	Y	71.0
			12	1982	1	Allan Borkowski	75,000	Y	15.0
			5	1982	1	Thomas G. Adelman	75,000	Y	9.5
			10	1980	0	Louis Morgan	0	Y	12.0
			10	1976	2	H. Robert Gill	98,782[87]	N	7.0
			458	1982	2	George M. Scalise	320,000	N	0.0
			80	1983	3	Raymond Noorda	NA	Y	16.7
			15	1983	0	Richard Lipson	90,000	Y	16.0
			3	1965	1	James W. Bracke	75,065	N	0.5
			50	1983	1	Kenneth Fisher	100,000	Y	18.0
			8	1974	1	David Moss	284,134	Y	43.4
			15	1981	3	Roger E. Covey	150,000	Y	35.0
			250	1919	1	Francis M. Williams	50,000	N	65.6
			29	1982	0	John R. Potter	148,712	N	0.0
			38	1982	0	Richard D. Sanford	197,105	Y	32.9

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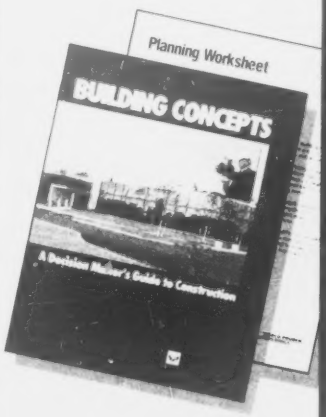

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HOW THE INC. 100 ARE SELECTED

The 1989 INC. 100 is the 11th annual ranking of the 100 fastest-growing publicly held companies in America. Companies are ranked by the percentage increase in total revenues (or net sales) between 1984 and 1988. This year the chart (see page 96) shows compound annual growth and the doubling time.

■ To be considered for the INC. 100, each company must meet the following criteria:

1. The company is an independent corporation, not a subsidiary or division of another company. Regulated banks and utilities and holding companies are excluded.

2. The company was publicly held before the end of fiscal year 1988.

3. The company shows an operating/sales history of at least five years.

4. The company's 1988 sales exceeded 1987 sales. Companies with growth over the five-year period but a decline in 1988 sales are excluded.

5. The company's 1984 revenues were at least $100,000, but not more than $25 million.

■ The INC. 100 research staff used company prospectuses, 10-Ks, and annual reports to maintain the in-house database of publicly held smaller companies. Using audited financial statements, researchers then ranked the companies.

■ An editorial team led by special projects editor Sara Baer-Sinnott and assistant research editor Deborah L. Weeks selected the 1989 INC. 100. The research was conducted by researchers Mary Harbaugh, Ann Mueller, and Julie Rasicot, and interns Dan Bowman, Susan Doherty, Kira Jacobs, Sarah Lang, Christine Muri, Erin McPherson, and Beth Watson.

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Company rank

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Arix 25
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Babbages 64
Ballard Medical Products 73
Beauty Labs 26
Brajdas 30
Calgene 78
California Energy 52
Canterbury Educational Svcs. 28
Cash America Investments 37
Catalina Lighting 96
Centex TeleManagement 4
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TURNING POINT

It's hard to imagine that companies growing between 97% and 317% a year for five straight years—as the members of this year's INC. 100 did—have ever known hard times. Such companies must be blessed, we think. They must each have found the right market at the right time, and then exploited it in the right way. A graph of their monthly sales must look like one smooth, steep, blood-thinning ascent. But the truth is different. As sometime INC. columnist and growth-company observer David L. Birch has pointed out, even the most successful companies don't climb uninterruptedly upward. They're volatile. Among their peaks are valleys. Sometimes the valleys are bad.

BY JAY FINEGAN

When Your Sales Staff Defects

It took place nearly seven years ago, but Steven Raymund remembers the scene as if it was yesterday. He chanced to come by the office one Saturday in late summer only to see the company's best salespeople huddled around the copying machines, working frantically. On a weekend? That's odd, he thought.

Then 26, having taken the title of operations manager only a month or so earlier, Raymund didn't ask any questions. "It never even occurred to me that they might be copying proprietary records of the corporation," he says. "But that's what they seemed to be doing: copying all the customer records and vendor information."

When he came to work Monday, on his desk were letters of resignation from five of the company's eight salespeople, the backbone of the field force. Raymund came to think of this episode of corporate treachery as "the palace revolt." And he played the role of crown prince.

Tech Data Corp. was a distribution company, selling computer supplies to large end-users in central Florida—hospitals, government agencies, and the like. Edward Raymund, Steve's father, started the company in 1974, and by 1982, the year of the rebellion, sales were running about $2 million a year.

COMPANY: Tech Data Corp., Clearwater, Fla.
RANK: #68
FOUNDED: 1974
SALES: $149.1 million
PROFITS: $4.2 million
BUSINESS: Distributes microcomputers and related peripheral products
CEO: Steven A. Raymund
AGE: 33

Steve had gone off to the University of Oregon for an economics degree, following up at Georgetown University's School of Foreign Service. He then did a brief stint on the South American loan desk at Manufacturers Hanover Trust Co., in New York City. "I came back to Florida just to prepare a résumé," he says. "I wanted to get into international economic development. My father was getting interested in catalog sales, and he asked me to put together a catalog. That piqued my interest in the company, but I had no plans to work there indefinitely."

Steve's appearance on the scene did not go unnoticed by the sales team. Ed Raymund, increasingly devoted to his other company, Tech Rep Associates, was spending about one day a week at Tech Data. The salesmen, Steve says, "had not unrealistic expectations that they might be able to purchase the business from my father." But as Steve moved deeper into the operation, publishing the catalog and gradually taking charge, the salesmen grew restive.

Seeing their buyout hopes eroding as the heir apparent eased into power, the five salesmen fled with copies

of the files to a competitor in Tampa. "I could have been a saint, I think, and there would have been resentment," Raymund says. "I was an obstacle between them and their goals. I just had no idea how duplicitous some people can be. There had been no grumbling, as far as I knew, before they quit. We were caught broadside."

It wasn't long before the company felt the impact. "Our customers suddenly weren't calling much anymore," Raymund says. He considered legal action against the traitors, but decided against it. "You need at least one deep pocket, and I don't think any of them had much money," he says. "Plus, I didn't think we had enough money to vigorously press a lawsuit."

Nor did he have money to replace the sales force. "Field salespeople typically earn more, and cost the company more, than inside salespeople, and we couldn't afford to hire new ones," he goes on. "Their commissions were on the order of 40% of gross profit. That was part of the reason the business wasn't going anywhere—it was being plundered by the salesmen."

But the turncoats had left behind a more troublesome legacy. By 1980 personal computers had arrived on the scene. Ed Raymund tried to expand his two-person telemarketing team to handle microcomputer supplies. That effort had been sandbagged by the field sales force. "They viewed it as a threat that might eclipse their importance to the company," Steve Raymund says. "These were professional, charismatic people, and they ended up dictating the focus of the company: large institutional sales. They had a strong grip on the customers and in turn a strong grip on my father. When they left, the customers left with them."

In the wake of the uprising, Tech Data's sales spiraled swiftly downward, from $200,000 a month to less than half that. The ledger edged into the red. Ed Raymund, already pained by the betrayal, considered shutting down the company. "He had another, very successful business that didn't cause him any headaches," Steve says. "And here's this one costing him a lot of money. We were borrowing money, and he was personally on the hook for it. We were really in jeopardy of going out of business."

Until this point, Steve says, he hadn't felt much emotional commitment to the business. But now, presented with a challenge, he concentrated on bringing the company back to life. He wanted to have a go at a rescue operation. And with his father's guidance, he set a recovery in motion.

"We began to explore very aggressive telemarketing to dealers as well as end-users," he explains. "We hired a few telemarketing people very quickly. We started buying mailing lists, calling people, and sending out the catalog. We also ran ads in some of the computer trade magazines. We were able to recruit a pretty healthy number of dealers through that process."

RICK FERRO/BLACK STAR

'We had to resurrect a new company from the ashes. Had the incident not occurred, I don't know if we'd have had the impetus to explore other avenues for growth.'
STEVE RAYMUND, TECH DATA

Over the next 18 months, Tech Data withdrew completely from the end-user market. "As we resurrected a new company from the ashes, it forced us to reevaluate our business and go in a different direction," Steve remembers. "Had this incident not occurred, I don't know if we would have had the impetus to explore other avenues for growth. It was a hard, nasty push off the bicycle. The bicycle got broken, and we had to find a new one. Fortunately there was lots of action in the microcomputer market at the time."

By mid-1983 the turnaround was in full swing. Tech Data started moving into PC products—disk drives, printers, keyboards, and the like. "By the middle of that year, we were making money again," Steve says, "and I purchased a majority share of the company."

Today, with 10 distribution facilities from coast to coast, 430 employees, and fiscal 1989 sales of $245 million, CEO Steve Raymund no longer needs to revise his résumé. As for Tech Rep Associates, Ed Raymund sold that two years ago. Ironically, it was purchased by his employees.

When Your IPO Is Shelved—and the Money's Already Spent

It was in the summer of 1982 that Terry S. Jacobs began to fear that his dream might come apart. Then 40, Jacobs just a year earlier had abandoned a six-figure salary in the insurance industry to become an entrepreneur. "Starting your own company is a way to get to the top in a hurry," he says. "*If* it works."

An actuary by training, he had become intrigued by the broadcasting business. His former employer, American Financial Corp. (AFC), had invested in John Kluge's Metromedia Inc., and Jacobs watched as Metromedia stock soared from $5 a share to $550 before splitting 10 for one. Kluge then took it private, and by selling off pieces he became a billionaire.

COMPANY: Jacor Communications Inc., Cincinnati
RANK: #76
FOUNDED: 1979
SALES: $78.5 million
PROFITS: ($6.2 million)
BUSINESS: Owns and operates radio stations
CEO: Terry S. Jacobs
AGE: 46

"That got my attention," Jacobs says. "As I started researching, I noticed that broadcasting always placed in the top five in profit growth, revenue growth, and return on equity in industry group rankings. I had always wanted to do something on my own, and this was a business where you could start small and grow into a big company. Lots of people had done it."

And so in January 1981 Jacobs bid farewell to AFC to try his hand at radio. He put together $1.9 million—$600,000 from savings and friends and $1.3 million

ANDY SNOW PICTURE GROUP

from the Bank of America—and purchased three small religious-programming stations, in Cincinnati, Baltimore, and Toledo. Religious stations, he explains, are less expensive and less complicated to run than mainstream operations, a good place for a newcomer to cut his teeth.

With interest rates topping 20% in those days of galloping inflation, Jacobs found he needed to raise more capital quickly to pay down his bank debt. Although the economy was in recession, he decided on an initial public offering of some 1.1 million shares of his fledgling firm, Jacor Communications Inc. He selected the New York City investment banking outfit of D. H. Blair to underwrite the deal. "This was in the spring of 1982," Jacobs says. "It took a while to get a small company like ours in a legal and financial position to go public. You need three years of prior audits, and we had to go back and put together financials on stations we hadn't owned three years earlier, and that was real difficult. We didn't have much money, but we spent most of what we had on lawyers and on getting the prospectus written and printed."

Meanwhile, the recession deepened. And that summer, lacking confidence that it could accomplish the deal, Blair informed Jacobs that it was going to put the IPO "on the shelf" and wait for better timing. Markets would improve, Blair predicted, in nine months.

But Jacor couldn't wait nine months. "We had used most of our capital getting ready for the IPO, and we couldn't borrow any more," Jacobs recalls. "And if we couldn't raise any equity money, we'd be out of business by then." The company was losing $50,000 a month—half of it to interest payments—and had a cash cushion of just $270,000. "So we had no choice but to go forward."

'There was this constant fear that this might not work and I might lose everything. You can never relax. The business is always on your mind.' TERRY S. JACOBS, JACOR COMMUNICATIONS

Jacobs found a small Cincinnati brokerage house called Blank, Conger & Sena that was willing to bet on him, putting its name on the prospectus. Lacking size and marketing muscle, however, the brokers were unable to sell much of the stock. The markets were impossible. Instead, it fell to Jacobs himself to perform what he calls a self-underwrite. "This was the most critical period in the life of Jacor," he says, "but I absolutely refused to give up on my dream."

Jacobs quickly borrowed $350,000 to buy a third of the stock himself. "I found a nice, friendly bank that was willing to loan it to me," he says, "but I had to pledge everything, including my kids, the future of the company, and my house. I was the first purchaser because I felt it was important, when I was going around trying to sell the stock, that people know that I had already stepped up and put my money in, that I was a believer. I thought that would be an inducement for other people to do it."

Then he hit the road. He went to New York City and knocked on every door where he might possibly get an appointment, all the small and midsize brokerage firms. He traveled to Atlanta, Chicago, Pittsburgh, Phoenix, and Denver, anywhere he could find regional investment houses. "Most were names I'd never heard of and haven't heard of since," he says with a laugh. "I'd be ashamed to show you the places that wouldn't even let me in the door."

It didn't help, he admits, that the prospectus was one big risk factor. "If you looked at it, you would not have bought the stock. I was selling a dream, really. I kept getting the same question—what was an actuary, a financial guy, doing trying to operate a broadcasting business? My reply was that management skills transfer between industries, and that as long as you know what you don't know, you can find people who do know it. That was a constant battle. I ran into literally hundreds of people who said, 'You'll never make it—this company won't be around next year.' It was tough to get anyone to believe in me."

Undaunted by the skepticism of the investment firms, Jacobs tried another tack. "I met with a lot of individual investors to try to convince them to buy some stock," he says. "I was introduced to them by friends and friends of friends. I did anything I could think of, including calling people cold. It was the toughest selling job I think anybody could have done, trying to sell shares in a company that owned very small stations, with no good prospects of becoming a big broadcasting company."

Back home in Cincinnati, Jacobs liquidated almost everything he owned except Jacor stock and put it all into the company. His wife, Susan, and their three children, long accustomed to his six-figure salary, were reduced to a Spartan budget—no vacations, no new cars or new clothing. There was money for bare necessities only—groceries and mortgage payments.

"My wife thought I was nuts when I left AFC making the kind of money I was making, and now I wasn't making anything," he says. "In fact, I was loaning money to the company out of my own savings and investments. So we went from having all the money we could spend to not having much to spend at all. Fortunately the kids were not yet in college."

The pressure was tremendous. "There was this constant fear that this might not work and I might lose everything," he recalls. "You can never be comfortable, you can never relax, the business is always on your mind. I went through periods of not sleeping very well, which created health problems." *(continued)*

Time was running out. Under the terms established for the IPO, Jacor had set a "best efforts" minimum sale of $1.1 million. The Securities and Exchange Commission allowed 90 days to complete an S-18 filing, permitting one 30-day extension. Jacobs had taken the extension. And it was only at 5:00 p.m. on November 4, 1982, the very last day, that he got the part that put him over the hump, a $50,000 sale to a private investor.

"That $1.1-million offering netted us just over $800,000, because we had huge expenses," Jacobs says. "But it allowed us to pay down our bank debt by $500,000. It also allowed us to go out and buy another station, in a little bigger market. That station made some money. So we could then do another public offering—a real public offering—in October 1983."

That one brought in $3.5 million, netting $3.1 million. Jacobs paid off the rest of his bank debt and was able to buy his first major station, an AM-FM combination in Jacksonville, Fla., in May 1984. "The Jacksonville buy was critical," he says, "because had those stations not performed well we probably would have gone under."

But they prospered, and with new cash flow and added borrowing capacity, Jacor began an impressive acquisition spree. Over the next few years, it added stations in Cleveland, Atlanta, Cincinnati, Nashville, Knoxville, Tampa, and Denver, where its big-signal KOA-AM is "the voice of the Denver Broncos." The biggest of these purchases came in 1985—a three-station deal in Atlanta including WPCH, an easy-listening station. That involved a $20-million private placement with Shearson Lehman Brothers. "By then, New York investment bankers were coming to us without my going and begging," Jacobs says. He's already been offered more than $70 million for the Atlanta property—not a bad return in less than four years.

No, money isn't really a big problem for Terry Jacobs anymore. Company revenues have escalated from $896,000 in 1981 to $78.5 million in 1988. This year marks Jacor's fourth straight appearance on the INC. 100. And Jacobs enjoys encountering those doubters he met during the dark days of 1982. "I take great pride in showing them that not only did we make it, we are now the 13th largest radio broadcasting company in the United States."

When Your Only Customer Goes Belly-up

Imagine for a moment that you've left a good job with a big corporation to start your own company. A year later you have a great product and an order worth $360,000. Now, imagine that the customer—your one and only—runs into serious trouble, leaving you with an uncollectible receivable of $150,000. You owe suppliers $80,000, but you have no money. Your life savings are gone. Your company, your hopes—they all lie on the brink of ruin. If you can imagine all that, you know how Kenneth Vaughan felt six years ago, when a spot on the INC. 100 looked as distant as another galaxy.

COMPANY: Neoterik Health Technologies Inc., Woodsboro, Md.
RANK: #65
FOUNDED: 1981
SALES: $6.5 million
PROFITS: ($39,000)
BUSINESS: Manufactures industrial respirators
CEO: Kenneth Vaughan
AGE: 49

A Welshman, Vaughan came to the United States with Racal Corp., a British defense contractor, and he rose to the post of general manager of Racal's U.S. safety company. But in 1981, yearning for a business of his own, Vaughan left Racal to set up shop in the basement of his house an hour north of Washington, D.C.

Then 41, degreed in electrical and mechanical engineering as well as mathematics, he had spied a niche in the hazardous environment–respirator business. Battery-powered industrial respirators were made chiefly by 3M, Mine Safety Appliances, and Racal itself. "These were specialized items, marketed and priced accordingly," Vaughan says. "The other manufacturers wanted to add more bells and whistles to further drive up the price. I saw the opportunity to provide a low-cost alternative."

With $120,000 in savings and outside investment, Vaughan and his partner, engineer James R. Wiggins, established Neoterik Health Technologies Inc., derived from a Latinate word meaning "modern." By early 1982 they had their first product, and the company sold its first batch—several hundred respirators for radiation-detection workers—to Three Mile Island, the infamous nuclear power plant in Pennsylvania.

Searching for distributors that autumn, Vaughan came across the owner of Portable Air Supply Systems Inc., a Cleveland wholesaler. "I liked this guy," he recalls. "He had a lot of money behind him. He was in the same kind of industry we are in. Our product and the one he wanted to make—a bottled air respirator—would not compete with each other, but they were for the same kind of users and distributors.

"He was getting ready to hire eight or nine salespeople but didn't yet have a product. On our side, we had a product but essentially no resources. What we needed was time to concentrate on design and perfect our manufacturing processes. So we agreed to sell our products exclusively through this wholesaler, who would become our sales and marketing representative."

Portable Air contracted to buy at least $30,000 worth of Neoterik's product each month, about 150 respirators, and Vaughan eliminated the need to establish an in-house sales staff. He was quite pleased. The deal "was an easy way to ensure that we brought in some money," he says. "The surface analysis indicated this was a good thing to do." And for six months the arrangement worked beautifully. In the late summer of 1983, however, it disintegrated. The principals of Portable Air had run into financial and legal difficulties.

"In a matter of 10 days," Vaughan says, "I realized something was seriously wrong. We had a receivable from them of nearly $150,000, because they were running us about 90 days late. They were our only customer, and now there was no way they could pay us. So suddenly we had no cash and no salespeople. What we did have was $80,000 worth of payables. Having used up our start-up cash and our $70,000 credit line, we were essentially bankrupt."

Vaughan and Wiggins sat down stunned, angry, and bewildered. Are we in this business or are we out? they asked themselves. Vaughan wanted to hang tough, but he also had his family to consider. His wife, Jolanta, was a homemaker; they had two young children. "I had to go to her and say, 'Look, there is no paycheck,' " Vaughan remembers. "I involved her in the whole process. We decided to draw no money whatsoever, but just knuckle down and see if we could turn this around."

Like many a strapped entrepreneur before him, Vaughan stripped the family budget to a war footing. There would be no money for new clothes or frills. A $6,000 savings account was earmarked for mortgage payments. As for groceries and other necessities, they borrowed that money from Jolanta's parents.

"It was one horrendously difficult period," he reflects. "I went without pay for 10 months. If I were to say we were paupers, that'd be wrong—we weren't.

RYNDA HAER

We were able to feed the kids, keep them comfortable and cozy. They still had toys at Christmas and their birthdays. We're a very tight family, and this just cemented it. I think that the warmth and the hugging that went on is the kind of thing that makes a lot of this possible."

Determination played no small role, either. "Jolanta believed in it because I did, and I was able to keep going because she supported me," Vaughan says. "It was absolutely symbiotic."

'I had to say to my wife, "Look, there's no paycheck." '
KENNETH VAUGHAN, NEOTERIK HEALTH TECHNOLOGIES

Vaughan took his decrepit Buick on the road, scouting for new customers. He ended up at a Con Edison nuclear plant on Long Island Sound. Vaughan learned that it needed respirators almost identical to those he'd sold to Three Mile Island. He could construct them from parts already stockpiled. "What I then had to do," he recalls, "was find a distributor to finance the job the way we wanted it financed."

He found one, a Maryland company called Radiation Service Organization (RSO), and struck a deal—RSO would pay Neoterik as it delivered the gear. The Con Ed order ultimately brought in $120,000. Searching for more capital, Vaughan turned to a small-business investment corporation, a venture firm called Suburban Capital Corp., in Bethesda, Md.

"I said, 'Look, guys, I have something going here. Come in and put a debenture into this company so we can keep it going.' And that's what they did. It turned out that Suburban Capital's president had spent some time as a welder and had been exposed to industrial fumes. The need for adequate protection just clicked with him immediately." The firm invested $350,000 in Neoterik, adding another $300,000 a year later.

It was about this time, late 1983, that the asbestos-abatement industry took off, and Vaughan quickly spotted the opportunity. Asbestos workers needed the kind of respirator Neoterik specialized in and constituted a much larger market than radiation workers. "That's when we got onto the growth path that's brought us where we are now."

In retrospect, Vaughan says, the Portable Air fiasco taught him an important lesson. "The things I did wrong were so clearly wrong that it makes me wonder why I did them. I had always thought that even if this [Portable Air] arrangement didn't work out, I could take the wholesaler out and deal directly with the distributors. Logically, you'd expect that to happen. But it doesn't work.

"As far as I'm concerned, it is imperative for a young manufacturing company to stay very, very close to its customers. If you put anything in the way—however beneficial it may appear—it's going to hurt you. Unless you sit there on the equipment user's doorstep and listen to him, you'll never be in the right place at the right time."

When You've Bet Your Company on a Process that Fails

As corporate crises go, LifeCore Biomedical Inc.'s looked terminal. James W. Bracke, the 42-year-old scientist-turned-CEO, likens it to "that first brush with death, when mortality suddenly has a different realism for you. It made me understand," he says, "that the line between victory and defeat can be crossed quicker than you think."

In 1984 victory had seemed close. A newly installed, million-dollar fluid-handling system would enable LifeCore to realize the vision Bracke had brought to it three years earlier, becoming the only commercial manufacturer of a material it had nursed through nearly four years of R&D. The material would—the company hoped—become a major medical commodity. LifeCore even had its first big order in hand, from Cilco Inc., a subsidiary of a giant pharmaceutical concern, which had committed itself to a substantial annual purchase.

COMPANY: LifeCore Biomedical Inc., Minneapolis
RANK: #94
FOUNDED: 1965
SALES: $3.6 million
PROFITS: $144,000
BUSINESS: Manufactures and markets high-purity biomaterials
CEO: James W. Bracke
AGE: 42

LifeCore's breakthrough had to do with sodium hyaluronic acid—or simply HA—a basic substance of all living tissue. HA is the thick, syrupy fluid that coats every soft-tissue cell, providing lubrication and flexibility. It plays a critical role in cataract surgery, among other procedures. Before LifeCore, the only commercially available HA was derived, strangely enough, from rooster combs. And so complicated was the production process—it took thousands of combs to produce minute quantities of HA—that it cost $9 million per pound. "In the history of the world," Bracke says, "there probably had been only a few pounds of pure HA made."

A Ph.D. microbiologist specializing in infectious diseases, Bracke had come up with a bioengineering technique to make HA. He'd observed that *streptococcus* bacteria—the same germs that cause some sore throats—somehow coat themselves with HA; they actually manufacture it. "Just like yeast makes beer, strep bugs make HA," he says. "We wanted to scale it up and produce it commercially."

And so by July 1984, in new quarters and with expensive systems in place, LifeCore was ready. The trick in

STEVE SCHNEIDER

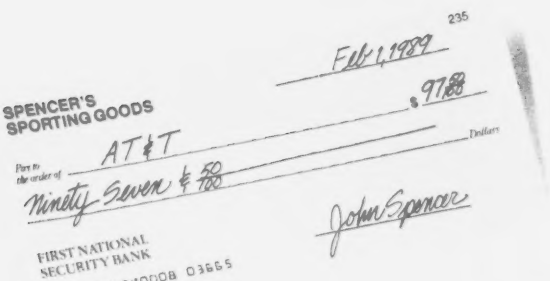
the production process was in the filtering. "This material is harder to purify than any drug that's ever been made," Bracke explains. "HA is intertwined with all the biochemistry in your body. All the proteins and everything else react with it very intensely. So when you purify it you have to remove all those elements. That's extremely difficult, but if you don't, they'll cause a reaction when they're injected into the body. Purification is the battle."

Over the next few months, Bracke came to the bitter understanding that the battle was going badly. "We discovered we couldn't purify the water in our system, and as a result there were microorganisms in it. It was impossible to make clean product." By December 1984 the outlook was grim. Earlier that year, poorly capitalized LifeCore had sold its only other revenue-generating business, diagnostic kits, to former company officers. Anticipating a smooth transition, Bracke had not foreseen additional funding needs. By his estimate, the company had only $6,000 left. It couldn't survive another month.

LifeCore teetered on the edge of oblivion, which was bad enough. But Bracke also felt a profound sense of personal failure. "I was the one who'd had the vision for this whole thing back in '81," he says. "I had a lot of good friends who bought stock in the company when I joined it. I had a banker who backed me early on because he believed in me. There were a lot of people who trusted me, who were convinced I would deliver."

He also had his six employees to reassure. If his scientist bolted, all hope was gone. But keeping a cool head was not easy. "A lot of people say, 'You can't let them see you sweat.' Well, I didn't do a very good job at

Phone 800



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the time. I was not being as perfect as a leader should be, because it had me lathered. I didn't know what to do. It was a real panicky time." He depended on Mozart to provide what little peace of mind he could find.

The folks at Cilco, his only customer, were not exactly crazy about the situation, either. They had made a lot of noise in the industry about the HA breakthrough, and had invested $4 million researching the product's possibilities. They were ready to begin testing. Doctors and patients were lined up, awaiting clinical samples. "In a medical company, it's very bad to announce that something is coming and then have to admit that it's late," Bracke says. "But that's the position we were putting Cilco in."

He brought in a consultant, and together they fashioned a corrective plan—one requiring a major cash infusion, and fast. Bracke felt he could handle that. "I was always a pragmatic scientist, not so much the esoteric guy in love with the thing because it's a neat idea," he says. "I helped pay for grad school by playing the stock market. So I've always been interested in business and finance. I find it far more challenging than pure science."

This time the challenge was more than he'd bargained for. He met with bankers, venture capitalists, and investment firms. Everyone turned him down. "Nobody could see it," Bracke recalls. "This was so new. There were people willing to invest in biotech in things like proteins and hormones and antibiotics, things they understood. But this stuff looks and acts like mucus. That didn't turn a lot of people on."

Finally, in desperation, he resorted to Cilco. "I didn't want to have to tell them, but they were the only ones who would understand. They had already invested heavily in getting ready for the product, and we had a worldwide, exclusive contract with them. They were my only shot."

'A lot of people say, "Don't let 'em see you sweat." Well, I didn't do a very good job of that, because it had me lathered. I didn't know what to do. It was a real panicky time.' JAMES W. BRACKE, LIFECORE BIOMEDICAL

He met with Cilco executives to explain the situation. They had high expectations for the product, believing that the surgical market for HA, then $50 million, was headed much higher. Lacking access to the rooster-comb variety of HA, they had no source besides LifeCore. It was worth a chance, they reckoned, to bet on the fledgling manufacturer. Before long LifeCore received a rescue package of $800,000.

Back in Minneapolis Bracke hired new engineering talent and brought in state-of-the-art filtration and pumping equipment—an entirely revamped system. Within three months, he had turned the situation around and was supplying Cilco with material. With the new process proving out, Cilco added $1.7 million more to ensure success. For its total $2.5-million investment it received 30% of LifeCore's stock.

Today, LifeCore produces more HA than eye surgeons need, and its product is rapidly gaining market share. Already used in skin-care creams, HA may soon be used in general surgery, where it is expected to impede or eliminate the growth of scar tissue. A possible application: surgery on the female reproductive system, which scar tissue can render infertile.

And Bracke? "I'm confident again, but not the way I was. After being shaken like that, you lose your old perspective, and you can never really go back." □

Research assistance was provided by Mary Harbaugh, Ann Mueller, and Julie Rasicot.

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HANDS ON

A Manager's Notebook

MANAGING PEOPLE

GETTING TO KNOW YOU

Your business is growing, your staff is getting bigger—and you know less and less about each employee. What's more, they probably don't know much about one another. One way to attack the problem and celebrate your people? A company yearbook.

That's what Original Copy Centers Inc., in Cleveland, decided its three-shift, 110-person staff could use. The execution is simple: everybody fills out questionnaires asking about their favorite music, ideal weekend, biggest challenges, and best childhood memory. Other fill-in-the blanks: "What I really like about my job" and "My role at Original." The book devotes a full page to each person's quotes, which run alongside a large photo.

While the yearbook is for employees, marketing manager Michael Setta says that customers also browse through the books, which are displayed in the lobby of the company's headquarters. And company president Nancy Vetrone, who conducts all the annual reviews, uses the profiles as background.

Production, done in-house, costs about $1,600, mostly for photography. If Original had to pay for everything, Setta estimates, the tab would be closer to $5,000.

COMPENSATION

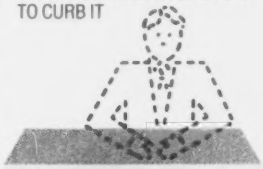
PAPER CHASE

In a fast-growing company, paperwork—and the people who handle it—is often neglected. Michael Barrist, founder of NCO Financial Systems Inc., a $1.5-million collection agency in Philadelphia, initiated a bonus system for his data-entry clerks that has brought the paperwork problem under control. Productivity has increased an average of 25%, which, Barrist says, saved him from hiring, training, and managing an additional clerk. And there has been no drop in quality.

For every day finished without a backlog, each of NCO's seven clerks gets a point; at month's end, $250, $200, and $150 prizes are awarded to the top three performers. To keep the rest of the staff's spirits up, NCO also has a random drawing for a $100 prize. "This is a business where usually everybody works to win some prize or contest except the clerks," Barrist says. "This way nobody feels left out of the fun."

ABSENTEEISM

WHAT COMPANIES ARE DOING TO CURB IT



What measures, if any, is your company taking to control excessive absenteeism?

Disciplinary measures or penalties	52%
Incentives or rewards	7
Combination of both	41

If using incentives or rewards, which types are used at your company? Check all that apply.

Bonus days	14%
Cash	39
Recognition awards	39
Prizes	4
Other	4

If your company uses incentives, have they been significant in reducing absenteeism?

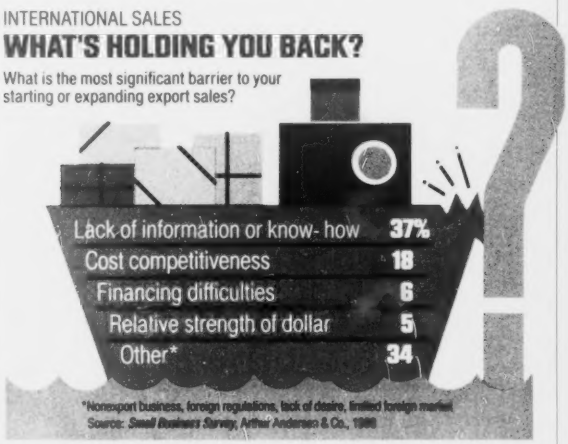
Very effective	22%
Somewhat effective	66
Not at all effective	12

Source: Unitorce Temporary Services *Absenteeism in the Workplace*, 1988

INTERNATIONAL SALES

WHAT'S HOLDING YOU BACK?

What is the most significant barrier to your starting or expanding export sales?


Lack of information or know- how 37%
Cost competitiveness 18
Financing difficulties 6
Relative strength of dollar 5
Other* 34
*Nonexport business, foreign regulations, lack of desire, limited foreign market

Source: *Small Business Survey*, Arthur Andersen & Co., 1988

INCENTIVES

DRIVE IN

To keep employees motivated and upbeat, many companies recognize outstanding work by selecting an employee of the month. Pam Reynolds, CEO of Phoenix Textiles Inc., in St. Louis, goes a step further. The $30-million textiles-distribution company also reserves a special parking slot for its employee of the month, located next to the president's space and near the front door. "It ensures companywide recognition for a job well done and is a great morale booster for the other employees to see that hard work doesn't go unnoticed," Reynolds says.

When an employee does a particularly good job, it's reported to the personnel manager, who meets monthly with key executives to decide who will get the parking space and a $10 restaurant coupon. "In such a fast-growing business, it's easy to lose track of everybody's contributions. This is one way we keep in close touch with our employees," says Reynolds, whose company was cited as one of the best employers in St. Louis in 1987 by *St. Louis* magazine.

FINANCE

COLLECTING ACCOUNTS

If past-due accounts are a problem in your company, you might follow the lead of Linda L. Miles. Miles, president of Linda L. Miles & Associates, a Virginia Beach, Va., management consulting firm for dentists and optometrists, gets on the phone herself and suggests to late payers that they consider the convenience of using their business credit card to pay their bills.

Miles's pitch goes something like this: "The expense voucher we submitted on May 30 has not been paid, and we need to clear the account soon. Rather than my taking time to prepare another statement and your wasting time preparing and mailing the check, we can clear the balance right now by placing it on your business credit card."

Such calls, Miles finds, "if they are friendly and firm," are 7 to 10 times more effective than sending out additional bills.

CHARTS: CYNTHIA DAVIS

HANDS ON

RECRUITING

HOW TO WRITE AN AD

If you've searched for ways to write a help-wanted classified that will bring in the kind of responsible, conscientious candidates you'd like to interview, you might want to take your cue from Steve Kantor.

Kantor, president of Gnossos Software, in Washington, D.C., wrote an ad recently that brought five times more responses than the newspaper had told him to expect—about 175 in all—and turned up five finalists he would have been more than happy to hire.

The ad began, "Small entrepreneurial firm seeks sharp liberal arts grad. Vision, ethics, personality required." Kantor claims many of the candidates cited "ethics" as the reason they answered the ad.

To narrow down the overwhelming response, Kantor sent a congratulations-on-being-selected-for-consideration letter to the top 20% of the applicants and asked them to answer these questions in another letter: "What are your greatest strengths? What are your weaknesses? What did you like and hate most about your most recent work experience? Describe the political, social, and economic impact of PCs." (Kantor says he was "half kidding" with the last question, and he was looking for respondents who answered in kind.)

"This way, I can screen out people who don't have drive and ambition," says Kantor, who ended up interviewing about 20 final candidates by phone. "I can get a feel for people without being influenced by their physical appearance, and it gives applicants a chance to be thoughtful about their responses. Plus, I save loads of time and energy."

SELLING

DROP A LINE

If making the sale requires you to get through the door to see the top dog, you'd better not rely on casually dropping in.

You can be much more successful if you plan in advance, says Tony Frederick, CEO of FrederickSeal Inc., a Bedford, N.H., marketer of industrial sealing devices. Frederick encourages his salespeople to send postcards to customers a week before calling on them; the postcards are printed with a list of all the items the company sells, by category, and carry the message that the salesperson looks forward to a visit the following week.

Upon arriving at the customer's office, the salesperson can honestly tell the appointments secretary that his or her call is expected. "The customer then feels an obligation to make it a two-way conversation," Frederick says.

That few salespeople are so well organized turns out to be a big asset. "You stand out from other people who call," Frederick says. "You build a presence in the customer's mind."

OPERATIONS

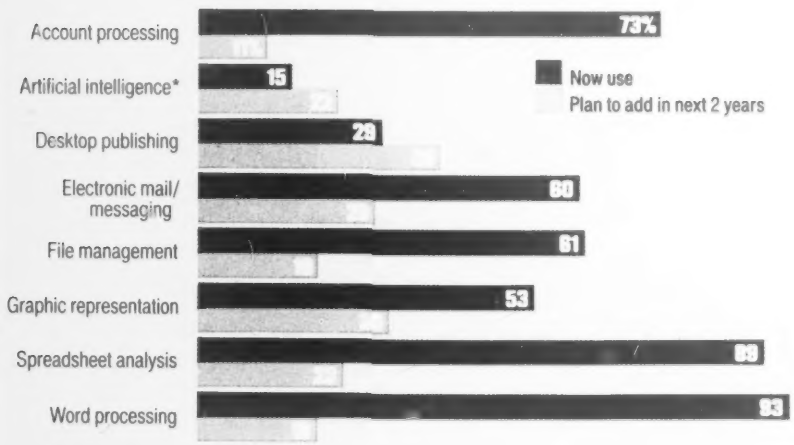
TIME-OUT

When high quality is the way you get and keep your customers, Scott Hallman reasons, you'd better find a system to maintain it—even if you have to sacrifice growth temporarily. Hallman is CEO of Hospital Correspondence Copiers Inc., a $16-million San Jose, Calif., company that provides medical record-copying services to hospitals nationwide. And key to his sales spiel is the quality of his service—no incorrect records copied, no late delivery. So when monthly customer checks indicate that quality is dropping—usually toward the end of the year—salespeople can take no more new customers for six to eight weeks.

"Our service is offered on a month-to-month basis," Hallman says, "so customers aren't locked into anything. We have to be vigilantes about quality." The reprieve gives the company the opportunity to hire and train new staff without the added pressure of servicing new clients. And the marketing staff has time to update market analyses, develop new campaigns, and call on prospects without having to close the sale. Does Hallman lose customers? He says maybe 10% of those he turns away look elsewhere. But compared with his chief competitor, he does much better at keeping the accounts he has.

OFFICE TECHNOLOGY

SOFTWARE USE



*Expert systems

Source: *Approaching the Automated Office*, by Walter A. Kleinschord, Administrative Management Society Foundation, Willow Grove, Pa., 1987

Reported by Leslie Brokaw, Teri Lammers, Stephen D. Solomon, and Ellie Winninghoff

THE RECEIVABLES CHALLENGE

What to do if customers are taking too long to pay their bills

BY CHARLES J. BODENSTAB

When I acquired my business almost six years ago, the accounts receivable were running about 53 days. Within a year, under my brilliant management, that number was up to 60 days. Then we had a write-off of more than $100,000. As you can imagine, that caught my attention.

We had installed some pretty effective systems in other parts of the operation during that first year. The one area we'd neglected, however, was accounts receivable. And there were reasons for that. First of all, it was an area of management in which I had no experience. Second, my optimism and eagerness to grow the company led to my making some less than prudent decisions about extending credit. Finally, let's face it: dealing with receivables is not one of the more enjoyable aspects of running a company. In fact, it's downright distasteful.

Another obstacle is that the reports and management tools available to control receivables are pretty limited. At first I thought that the classic past-due report would be a great device to monitor problems. But upon scanning this monstrosity a few times, I found my eyes glazing over. I tuned out and we got into big trouble.

After that $100,000 write-off, however, we started a major overhaul of virtually everything we did. About two years later our receivables were down to the 40- to 42-day range, and lately we've even been in the high 30s. Bad-debt write-offs are running around $20,000 a year, or two-tenths of a percent of sales, compared with our past six-digit experience.

Here's what worked for us:

☐ **Look at personnel.** Often, I've found, the first step toward progress is to put someone different in a key position. That was true in this case. Our credit manager simply wasn't going to be up to the job once we revamped the system. We replaced him with a woman who had started out as our receptionist and had progressed through the organization. Although she didn't have any academic credentials or experience in receivables, she had a certain forcefulness and a personality that seemed just right. And it was. We also put her on an incentive plan—she receives a cash payment of $20 to $100 each month based on the number of days of receivables. And she has been great at doggedly pursuing delinquent accounts and limiting our exposure to losses.

☐ **Get yourself out.** It finally became clear—even to me—that until I got out of the credit area on a day-to-day basis, we weren't going to make any progress. Owners are optimists. We're customer oriented. And both characteristics are lethal to the credit-approval process. Plus, if the customer knows that you can approve credit, you have no place to hide and are likely to acquiesce.

So we set the rules. I was no longer available for credit approval.

☐ **Establish initial creditworthiness.** There's an entire body of literature on how to establish the creditworthiness of a prospective customer, so I'm not going to repeat the material except to say: *do it.* Most companies understand that, but they fail to write up the necessary procedures and policies. We were no exception, but we are true believers now. Not only do we thoroughly spell out procedures, but we go to great lengths to communicate the logic behind the ground rules to our salespeople.

One technique we initiated helps keep both our sales- and credit people happy. Quite often, in order to lock in a new customer who needed a quick shipment, we'd bypass the initial credit check. While we couldn't continue doing that, we did install an interim "quick credit approval." A salesperson has to supply us with only a bank name and two vendor references, and we will guarantee a response within a half day for the first shipment—with the understanding that the final full credit-approval document will follow. This procedure may sound trivial, but without it there was a tendency to use the rush situation as an excuse to forego credit checks entirely.

☐ **Check credit before shipment.** Our basic computer system had some fairly good credit-checking capability at the time an order was entered—in theory, at least. The problem was, we were partly on the system and partly doing the job manually. When we got the system entirely on line, we could implement the credit-checking features. Now, when an order is entered, the computer notes: 1) if there is a

RECEIVABLES OUTSTANDING

For selected industries*

	Median number of days
WHOLESALE:	
Tires and tubes	42
MANUFACTURING:	
Electronic-computing equipment	69
SERVICE:	
Employment agencies	41
RETAIL:	
Family clothing	8

*Fiscal year ends 6/30/87 through 3/31/88.

Adapted from *Annual Statements Studies 1988 edition*, with permission of Robert Morris Associates, Philadelphia

BAD JUDGMENT

How *not* to handle your receivables

Here's how I managed to wind up with a $100,000 receivables write-off. The technique is infallible, but I wouldn't recommend you try it.

- Start with an unknown individual who has a minimum of capital and a great story about his prospects in a far corner of the state.
- Offer extended terms so he can finance the inventory needed to generate the fantastic business he has described.
- When he is past due on his payments, rationalize that this is temporary, perhaps because of seasonality.
- Let the account's salesperson verify that the inventory is in fact in place.
- As you look at the financial statements, be sympathetic that this is a new operation having trouble getting a handle on its operating results.
- When you start to realize your customer is in trouble, don't take your losses early. Stick with him, and you ought to be able to double the amount you have to write off.

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No. 103	$9.95		$
		GRAND TOTAL	$

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credit hold; 2) if a credit limit is being exceeded; and 3) if the customer is 60 days past due. If any of these situations exist, the credit manager has to clear the order.

We learned that if we didn't stop a risky account's product from getting out the door, we were constantly playing catch-up ball. And, frankly, our sales force—maybe yours, too—was not above trying to slip an order through the system.

☐ **Monitor extended terms.** Extending terms is just another form of price cutting. It also extends your receivables and your risk of loss. This was another area where I had to get out of the picture. Our controller has a good protective attitude about letting go of the money, and he now is in charge of approving any extended terms.

☐ **Develop management reports.** While I had to get out of the day-to-day handling of receivables, I did need overall management control. Gross measures, such as percent past due, are fine for estimating general progress, but they are not tools to help get at the heart of various problems. And with more than 3,000 customers, the classic past-due report by customer listing was a mind-boggling mass of data.

I finally developed a month-end exception reporting system that extracts the critical information that I need to oversee receivables (see "Hitting Your Numbers," April 1987). Briefly, this program isolates two groups of accounts. The first report lists only those customers whose accounts have undergone a statistically significant adverse change. Rarely is this more than 70 to 80 accounts out of 3,000, but they make up 99% of the short-term problems. The second report lists the accounts with a history of problems, which need to be monitored. Again, it extracts only about 100 customers out of 3,000, but covers 99% of the chronic offenders.

In both reports, since we display only a small fraction of the accounts, we can print out a six-month history, which aids immensely in tracking them. With these two reports, I have a firm handle on receivables within a half hour after getting the printouts. They're also a useful guide for the credit manager in pinpointing which accounts need following up.

The payoff for all this effort has not been small potatoes. In my company, with $12 million in sales, the result of getting receivables down from 60 to 40 days is roughly $700,000. This may not be the most glamorous end of the business, but figures like that do quicken the pulse. ☐

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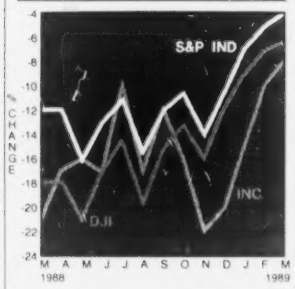
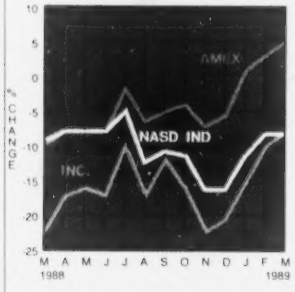
INVESTING IN GROWTH COMPANIES

INC. vs. CONSERVATIVE AVERAGES



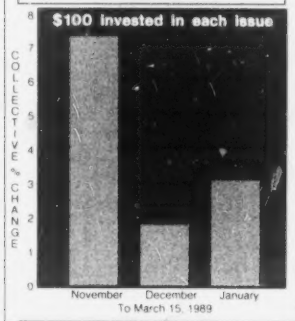
All averages start at 0 in October 1987.

INC. vs. SPECULATIVE AVERAGES



All averages start at 0 in October 1987.

IPOs IN THE AFTERMARKET



INITIAL PUBLIC OFFERINGS: FEBRUARY 1989

O-T-C sym.	Company	Business/product	Offering Size ($mil.)	Offering Price	First aftermarket bid	Underwriter
BHM[a]	B + H Maritime Carriers Ltd.	Will own & operate secondhand vessels	33.75	15.00	14¾	Salomon Bros.
BTELU	BT Telecom	Telecomm. co.	8.80	5.50[c]	6¼	R. W. Pressprich
BTUI	BTU International	Mfrs. thermal processing products	13.60	8.00[c]	8¾	Smith Barney
CGXXU	Cattleguard	Operates restaurants	4.00	4.00[c]	4¼	D. H. Blair
CTAI	Clinical Technology Associates	Develops pharmaceutical products	3.75	5.00	5¼	Prescott, Ball
CXE[b]	Colonial High Income Municipal Trust	Closed-end fund	270.00	10.00	n.a.	Kidder, Peabody
HCTUF	Healthcare Technologies	Develops, mfrs. & mkts. medical kits	2.50	5.00[c]	5¼	D. H. Blair
YLH[b]	High Income Advantage Trust III	Closed-end fund	15.00	10.00	n.a.	Lazard Frères
HMEDU	HiMedics	Develops pharmaceutical products	4.00	5.00[c]	6¼	D. H. Blair
HWKF	H. W. Kaufman Financial Group	Holding co.	5.60	4.00	7¼	Evan Kaufman
MEN[b]	MuniEnhanced Fund	Closed-end fund	250.00	12.00	n.a.	Merrill Lynch
NETG	Network General	Produces network-analysis tools	15.20	8.00[c]	9¼	Alex. Brown
PMM[b]	Putnam Managed Municipal Income Trust	Closed-end fund	400.00	10.00	n.a.	Prudential-Bache
UFBK	United Federal Bancorp	S&L holding co.	26.88	9.00	9¼	Merrill Lynch

Initial public offerings sold at $1 or less not included. n.a.=not aftermarket bid or approximate. [a]Trades on NYSE. [b]Units of 1 common + 1 class A warrant + ½ warrant (1 for 100 shares). [c]Pricing date 2/28; 2/27 shares to 1.7 million shares. [d]Units of 4 common + 4 warrants. [e]Offering increased from 1.64 million shares to 1.9 million shares. Offering data source: [illegible] Dealer's Digest Inc., 150 Broadway, New York, NY 10038.

STREET TALK Following a brisk surge that carried it some 14 percentage points in four months, the INC. Index at last achieved a measure of post-Crash respectability this March, tying with the NASDAQ Industrials and closing in on the DJIA and S&P 500. Those stocks must be tired campers indeed.

Just as well, then, that they have been replaced with fresh legs, derived from the 1989 INC. 100. The effect of the revised INC. Index, made up of all actively traded stocks selling for more than $2 as of this March 15, will hit the charts next month, and judging from their 12-month stock-market performance, there's welcome sprightliness. From March '88 to March '89, the INC. 100 taken as a whole (INC. buys a fictional $100 worth of each issue at the start of the period, and sells the holdings at the end, arithmetically toting up the result) was ahead by more than 16%. For one of the few times in recent years, our bunch led all comers, beating the DJIA (up 12.5%), the S&P Industrials (up 10.3%), the American Stock Exchange Index (up 11.3%), and—surprisingly, inasmuch as 91 of the 100 INC. issues trade there—the NASDAQ Industrials (up only 2.5%).

—*Robert A. Mamis*

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